G. R. S. 59]

GENERAL AND REVENUE SECRETARIAT.

1911-12.
(Genl-Misc)

P. 77

File No. 319-11

Serial Nos. 1-20

Papers Filed.

Month January 1913

SUBJECT.

Invention for Improvements relating to apparatus for the destructive distillation of Coal' by Messrs. Hermann Clarke and James Alexander Campbell of England

PREVIOUS REFERENCES.	LATER REFERENCES.

K. N. Krishnaswamy Esq. 25-1-13

D

G.R.S. 11] 1911–12.

GENERAL AND REVENUE SECRETARIAT.

(gen : mis)

NOTES

Gen. File No. 319 11/12

FILE HEADING.

Invention for "Improvements relating to Apparatus for the destructive distillation of Coal" by Messrs Hermann Clarke and James Alexander Campbell of England.

From

Messrs Edward Evans & Co, London.

No. letter Dated 7. 6. 12 Received 24. 6. 12

Diary No. 5557	Enclos. 4 Spare Copies.	Serial No. 1

BRIEF ABSTRACT OF LETTER.

Forwards applⁿ in duplicate for leave to file a specification of the above named invention and ~~also~~ a power-of-attorney and also a British Postal Order for 14sh 8d for applⁿ and stamp fees.

NOTES AND ORDERS.

To the Cash Section for kindly cashing the Postal Order pinned to the receipt.

27.6.12 S. 412 Received the Postal order

27.6.12 Cashed by Dy

To B & L 2.7.12

NOTES—First Sheet.

GPB—30,000—12-8-11

General and Revenue Secretariat.

Gen File No. 319 of 191/

D 5557
D 914

Serial No.

3.
Drafts are subd Orders are solicited whether the specification has to be sent for expert opinion to the Offr: Agricultural Chemist's Office a la Mr F. L. Usher, Prof: of Chemistry, Central College.

Subd
Ejt 99
4.7.12

4. Addressthe former in the first instance Issue drafts appd

5.7.12

2. To the Superintendent of Stamps: No S. 143 dd 10.7.12
Forwards the Power of Attorney rcpd to above and requests that the Peon may be furnished with the Duppone Stamp of the value of Re 1/- and retd to this Office.

3. To the Dy Comr, Rev Dept, Bangalore No G 1144 dd 10.7.12 Forwards Rs 10/-, recd with slt and requests an acknt for the receipt of the amount.

4 From the Supdt of Stamps. No 16, dd 11.7.12.
Returns duly stamped the power of attorney forwarded with R 2, and requests acknowledgment.

5 Draft Subd
Ejt 99
15.7.12

6 Issue

18.7.12

NOTE—Contn. sheet.

GPB—20,000—20-1-12

(3)

G. R. S. 12]

General and Revenue Secretariat.

G. M. File No. 318 of 1911-12

Q 1155
D 877

Serial No.

5. To the Supdt. of Stamps, No G. 402 D/23-7-12— Acknowledges the receipt of the duly stamped Power of attorney forwarded with the above

6 From the D C Trs Deptt, Bangalore. No. 17 D/12-7-12. Acknowledges the receipt of the amount forwarded with Sl 3.

7. Draft subd as directed in para 4 above.

GM 99 / 23-7-12 VS. 41

Issued. 27.7.12

7 To the Offr. in ch., Agr. Chemist's office, No G. 683 D/5-8-12— FS for report the applcn received with Sl 1, invites attention to G. M. 334 of 1906-07 forwarded with No G. 682/G. M. 320-11-7 D/5-8-12 & requests to be informed if the present invention is sufficiently novel for a patent being granted thereto

8WS

8 From the above. No 380 D 12. 8. 12. With refce to the above, reports that for the reasons explained, the leave applied for for filing the specification may be granted.

8. Subd for orders with refce to para 4 above.

GM 99 / 15-8-12 VS. 41

9 Put up draft granting leave as recommended

bm 16/8/12

10 Draft subd. GM 99 / 17-8-12 VS. 41

11 Sees) bm 19-8-12

NOTE—Contn. sheet.

GPB—20,000—20-1-12

G. R. S. 12]

(4)

General and Revenue Secretariat.

G. M File No. 319 of 1911-12

(D)

Serial No.

12. 1st Counselor

EG 27/8/12

87
2464
644.

13. Draft appd by 1st Counsellor 23.8.12
MS

14. EG 24/8

15 Issue
HMZ 24/8/12

9. To Messrs. Herman Clarke & James Alexander Campbell, Engrs, ~~Madras~~ Enfield Cantt, G.1208 d/ 23.8.12 - Authorises them to file specification of their invention refd to above

10. To Messrs Edward Evans & Co London, Rs G.1210 d/ 23.8.12 - Fd the above for Communication to the parties Concerned

Evans 11 From the above d 16.10.12

Forward per British Postal Moneyorders pr 40 Sh and 6 copies of the Specification and request the filing of the Specification.

16. To the Cash Section pr stating if the full sum of Rs 30/- was realised from the Br: Postal Money Orders referred to in the above.

Ch 99 15-11-12 VS. 41 Rs - full sum of Rs 30/-

NOTE—Contn. sheet.

GPB—20,000—20-1-12

94

Serial No.

was realized

All

16/11/12

The usual drafts are submitted. The draft and fair of the Govt Order authorising the filing of the Specifn require signature.

9A99 21.11.12

6 copies of the Specification have been received, instead of the usual 4, and hence, the name of the Offr in ch: of the Agricultural Deptt who reported upon the specifn, has been added to the usual list of Offrs to whom such specifns are sub.

Subd 9A99 21.11.12

VS

22/11

W.S.)

Issue

22/11

25.11.12

12. To the Compiler, Mysore Gazette, Rs Q. 2946 of 3.12.12— Notifies the filing of the Specifn of the invention reptd to.

13. To Messrs Edward Evans & Co, London, Rs Q. 2947 of 3.12.12— Forwards copy of the above Notifn & returns Cl 9 with the Certificate at foot duly filled in & signed

14. To the D.C. Treasury Deptt, Bangalore,

NOTE—Contn. sheet.

GPB—65,000—7-6-12.

(6

General and Revenue Secretariat.

G. R. File No. 319 of 1911-12

Serial No.	
	29/81 3 ser 3 3 ser 3279
	No G. 2952 d/4.12.12 — Forwards Rs 30/- received with Sl 11 above & requests acknowledgment
15.	To the State Geologist, Chief Engineer, Supt, Govt Museum, & Offr in ch. Agr. Deptt, No G. 2953-6 d/4.12.12 — Re a copy of the Specifn of the invention referred to.
16	From the Dy Comm., Hy Deptt, Bangalore. No 1208 d 5.12.12
	Acknowledge the receipt of the amount forwarded with Sl 14
17	From the State Geologist. No 1303 d 6.12.12.
	Acknowledge the receipt of the specification forwarded with Sl 15.
18	From the Supdt, Govt Museum. No 163 d 5/7. 12.12
19	" — Offr in ch: of Agrl Deptt. No 116 d 7.12.12
	Do — Do — — Do —
	The reply of the Chief Engineer to Sl 15 may be awaited.
	Subd 21.12.12
	28/12/12
20	From the Chief Engineer. No 10440 d 24.12.12.
	Acknowledges the receipt of the specification forwarded with Sl 15.
	The correc may now be filed.
	Subd 3.1.13
	File 4.1.13

NOTE—Contn. sheet.

GPB—65,000—7-6-12.

Received British Postal order for 14s-8d. or Rs 11/- Eleven only

EDWARD EVANS & CO.

Telephone, No. 4916 Holborn.
Telegraphic and Cable Address. "Effugium, London."
Lieber's Code used.

BL/D

27, Chancery Lane,
London, W.C

June 7th 1912.

DIARY No. 5557

V Cashier 24/6

19 11-19 12
SECTION Gen: Mis
FILE No. 319 of 1911-12
SERIAL No. 1

The Secretary to the Government of His Highness the Maharaja of Mysore,
Genl. and Rev. Department,

Sir,

re Herman Clarke & James Alexander ~~Campbell~~.
"Improvements relating to apparatus for the destructive distillation of coal".

Herewith we beg to forward application in duplicate for filing on application for Patent in Mysore.

We also forward herewith 11 Rupees being 10 Rupees in respect to the filing fee and 1 Rupee for stamp on Power of Attorney.

Very respectfully,

APPLICATION

TO THE DEWAN OF MYSORE.

The Application of Herman Clarke, of 3, London Wall Buildings, London, E.C. England, Engineer, and James Alexander Campbell, of 23 Eton Road, Ilford, England, Engineer, for leave to file a Specification under Part I of the Mysore Inventions and Designs Regulation 1894.

1. The Applicants are in possession of an Invention for "Improvements relating to apparatus for the destructive distillation of coal"; they are the Inventors thereof; and, to the best of their information and belief, the Invention is new within the meaning of Part I of the Inventions and Designs Act, 1888, an no circumstance exists which, if the Applicants are authorised to file a Specification and file it in accordance with that Part, will disentitle them to an Exclusive Privilege thereunder in respect of the Invention.

The Applicants have applied for a Patent in the United Kingdom in respect of this Invention, No. 13125 dated the 31st day of May 1911 See Illustrated Official Journal (Patents) No. 1168 page 802 Complete Specification filed the 27th day of October 1911. See Journal No. 1190 page 1556. ~~and accepted on the day of 19~~ ~~See Journal No. page~~

2. The following is a description of the invention:-

This invention relates to apparatus for the destructive distillation of coal or other carbonaceous substances and more especially to an apparatus in which a number of retorts are mounted in a furnace setting having heating chambers provided between the respective retorts, such chambers being formed by two perforated walls distanced apart and provided with projecting baffle bricks to form extensive heating surfaces, some of the baffle bricks serving to tie the walls together, and wherein the heating of the retorts is effected by the combustion of gas or vapour and air in combustion chambers disposed beneath the heating chambers from which the gases pass upwardly and laterally through perforated walls into contact with the retorts, finally escaping to a central flue whence they pass out through a chimney.

The invention has for its objects to provide a construction whereby economy in the consumption of gas for heating the retorts is secured and wasteful outward radiation of heat from the retorts is reduced or prevented and generally to provide retorts and retort settings in which carbonisation may be effected at a relatively low temperature and in which the cost of construction is relatively small.

According to the invention the gas is supplied to burners arranged in the combustion chambers and the air introduced into the said chambers is pre-heated, being passed under control through air passages around the waste gas discharge outlets or passages to air chambers from which it issues into the combustion chambers and is uniformly distributed with the gas therein.

According to the invention also, in the outer brickwork surrounding the retorts and the heating chambers there are provided cavities or spaces filled with non-conducting material so that the radiation of heat outwards from the retorts is minimised or prevented in a great degree.

The invention comprises the construction hereinafter described and illustrated in the accompanying drawings in which

Figure 1 is a cross-sectional elevation of the retorts and retort setting taken on the line A.A. of Figure 3.

Figure 2 is a cross-sectional elevation of the retorts and retort setting taken at right angles to Figure 1 on the line B.B. of that Figure.

Figure 3 is a sectional elevation of the retort setting, showing one of walls of a heating chamber, and the corresponding combustion chamber taken on the

line C.C. of Figures 1 and 4.

Figure 4 is a sectional plan of the retorts and retort setting taken on the line D.D. of Figures 1 and 3.

Figure 5 is a sectional plan taken on the line E.E. of Figure 1.

Figure 6 is a sectional elevation to an enlarged scale of one of the combustion chambers with burner and air chamber.

The drawings show a setting in which two longitudinal series of retorts are intended to be set, one series only is shown in Figures 2, 3, 4 and 5, the other series is arranged on the opposite side of the air flue g which is intended to be common to both series of retorts in the construction illustrated.

In carrying the invention into effect a number of vertical retorts a are provided advantageously of oblong cross section and of good fire clay, and having wide lateral walls yielding narrow spaces widening slightly towards the lower extremity. A number of such retorts is provided in one setting and each retort may be formed in two or more lengths or sections a^1 connected together by a spigot and socket joint or otherwise. The exterior surface of the retorts is preferably corrugated to assist in strengthen-

ing them and to increase the effective heating surface. Each single retort a is mounted within a vertical chamber or setting c of a shape corresponding to its section having an intervening space between the retort and the walls d^1 of the adjacent heating chambers d, down which the heating gases may pass on their way to the outlet flue i. The retorts are preferably arranged in two longitudinal series with central waste gas outlet or discharge chamber such as b in the setting around which may be formed the passages b^1 for pre-heating the air for the combustion of the heating gases.

The walls d^1 of each of the heating chambers are tied together at intervals by baffle bricks g which project through across the walls and into the retort chambers c and contact with the sides of the retorts, thereby serving to support their walls. Other projecting baffle bricks g^1 are also provided to increase the heating surface of the walls of the heating chambers.

At the lower end of each of the heating chambers there is provided a combustion chamber or space d^2 in which there is fitted from below a removable gas burner k provided with a supply pipe k^3 and having removable nozzles k^1 and

adapted to be retained in position in any suitable manner, as by a supporting plate k^2 bolted in position on the frame members of the setting p. At one side of the combustion chamber d^2, immediately below the corresponding wall d^1 of the heating chamber, there is provided an air chamber n having outlets n^1 leading to the combustion chamber and preferably corresponding in number to the gas nozzles k^1. The air is received into the chamber n from the heated air passage b^1 or passages extending upwardly along the length of the retorts over the centrally disposed waste gas outlet or discharge chamber b and downwardly to a central air supply chamber or passage q common to both series of retorts (as illustrated in Figure 2) whence it is admitted to the said heated air passage or passages through suitable dampers or regulating valves not indicated in the drawings.

After the gas or vapour and air are injected and ignited in the combustion chamber d^2 the gases escape into the section of the heating chamber d disposed immediately above through suitable apertures f^1 in a slab f extending over the combustion chamber d^2 and above the air chamber n and resting upon a flange a^2 provided on the lowest section of the retort a, thus forming a chamber d^3 around the

lower end of the retort The gases then pass upwardly and laterally into the retort chambers e through apertures h in the walls of the heating chamber, which apertures preferably increase in cross sectional area towards the upper end of the heating chamber.

The heating gases, after passing through the walls of the heating chambers d, pass downwards in contact with the lateral walls of the retorts into the chambers d^3 and thence to outlet passages or flues i corresponding in number to the several combustion chambers or retorts, the flow of the gases being preferably controlled by dampers i^1 in order to regulate the heating, and thence into the central waste gas outlet or discharge chamber b leading to the chimney. These latter may also be provided with dampers for controlling the draught and flow of the gases.

In the outer brickwork setting y surrounding the retorts and heating chambers, there are formed spaces or cavities r or the brickwork is provided as double walls with intervening spaces to receive non-conducting material serving to minimise or to reduce the outward radiation of heat from the retorts and heating chambers and

thus materially to contribute to the economical working of the apparatus.

Observation holes such as v and w Figure 3, may be provided closed by removable blocks.

The retorts and the adjacent parts of the brickwork setting in which are arranged the combustion chambers and heating chambers are supported on suitable frames p preferably of cast iron.

The lower ends of the retorts are received into suitable seatings p_1 and provided to receive them in the said frames and are closed by suitable cover plates s, mounted in slideways s_1, which in the closed position fit against seatings p_2 provided for them in the frame.

The cover plates are operated by any suitable means, for example, by means of a toothed rack t detachably secured to the cover plate s_1 and adapted to engage a spur wheel or pinion t_1 operated through gearing, if necessary, by a hand wheel, the rotation of which will thus cause movement of the cover plate s in one direction or the other.

In order to secure an effective closure and at the same time to avoid frictional

contact with the seatings in the opening and closing movements, the cover plates are provided with stepped inclined surfaces or abutments s^2 adapted to contact with inclined surfaces or abutments p^3 formed on the frames so that in the lateral movement of the cover plates they are raised and pressed upwardly into contact with their seatings.

The cover plate may advantageously be provided with ridges s^3 which bed against the seatings referred to.

At the upper ends the retorts are provided with hoods u having socket flanges u^1 at their lower ends adapted to fit over the outwardly extending flanges provided at the upper end of the top retort section.

The outwardly extending flanges of each retort section may serve for the closure or separation of the spaces immediately surrounding the retorts.

Each hood is provided with a gas outlet u^2 for connection to the hydraulic main and a cover plate u^3 advantageously pivoted upon a lever or levers u^4 conveniently fulcrummed to the hood, which lever, when the cover plate is

in the closed position, is locked by a cam device u^5.

A baffle plate u^6 is provided in the hood opposite the gas outlet in such position that it serves, during retort charging operations, to prevent the entry of any of the charge into the gas outlet.

In the case where fire clay retorts are used it is desirable to make joints between the retort sections, and between the retort sections and the hood and supporting frame with asbestos or similar refractory material.

In order to secure equalised heating of the retorts throughout their length where this is considerable, the heating chambers may be divided into sections and each section be provided with a separate combustion chamber having gas and air supply and a separate outlet into the central discharge chamber or chambers.

Any suitable arrangements may be made for charging and discharging the retorts by the provision of travelling hoppers, discharge shoots and conveyors.

Having now particularly described and ascertained the nature of our said Invention and in what manner the same is to be performed, we declare that what we claim is:-

1. Apparatus for the destructive distillation of caal or other carbonaceous substances, wherein a number of vertical retorts are arranged in series with corresponding heating chambers intermediate of the retorts, each heating chamber communicating with a corresponding combustion chamber beneath, in which a gas burner is transversely disposed and into which combustion chamber air is passed from a transversely disposed air chamber to which preheated air is supplied, the arrangement being such that the preheated air and gas are uniformly distributed into the combustion chamber and the heating gases pass from the combustion chamber upwardly through the heating chamber, and then downwardly between the walls of the heating chamber and the retort to the outlet flues, substantially as described.

2. Apparatus for the destructive distillation of coal or other carbonaceous substances, such as specified in claim 1, in which the vertical retorts are each provided of oblong cross-section, and in separate lengths or sections, gradually widening out towards the bottom substantially as

described.

3. Apparatus for the destructive distillation of coal or other carbonaceous substances, such as specified in claim 1, and in which cavities or spaces are provided in the brickwork setting for the reception of non-conducting material, substantially as described.

4. Apparatus for the destructive distillation of coal or other carbonaceous substances substantially as hereinbefore described with reference to the accompanying drawings.

3. The applicants, therefore apply for leave to file a Specification of the invention pursuant to Part 1 of the Mysore Inventions and Designs Regulation 1894.

Dated this 1st day of June. 1912.

Herman Clarke.

James Alexander Campbell

We, Herman Clarke, and James Alexander Campbell, the applicants above named do declare that what is stated in this application is true to our knowledge, except as to matters stated on information and belief, and as to those matters we believe them to be true.

Herman Clarke.

James Alexander Campbell

Fig.1.

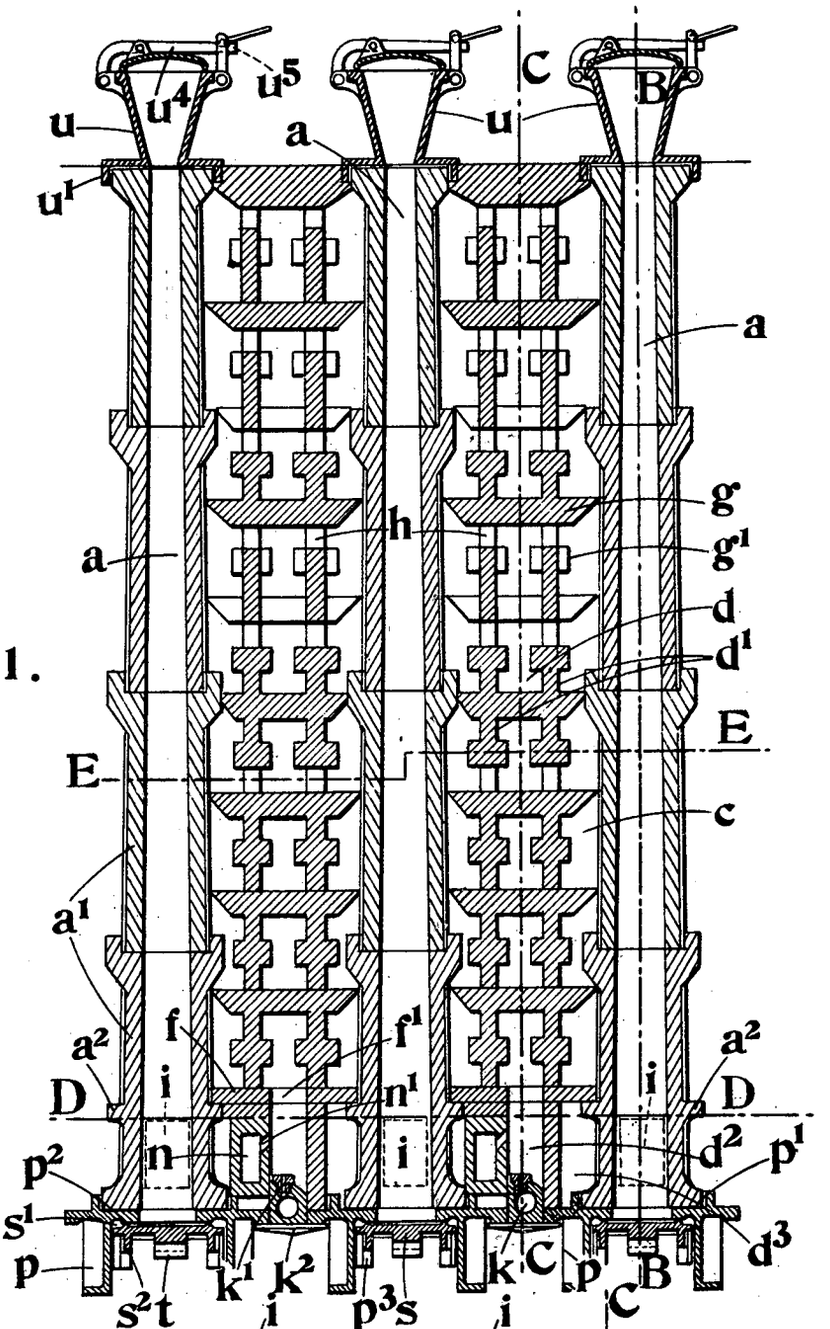
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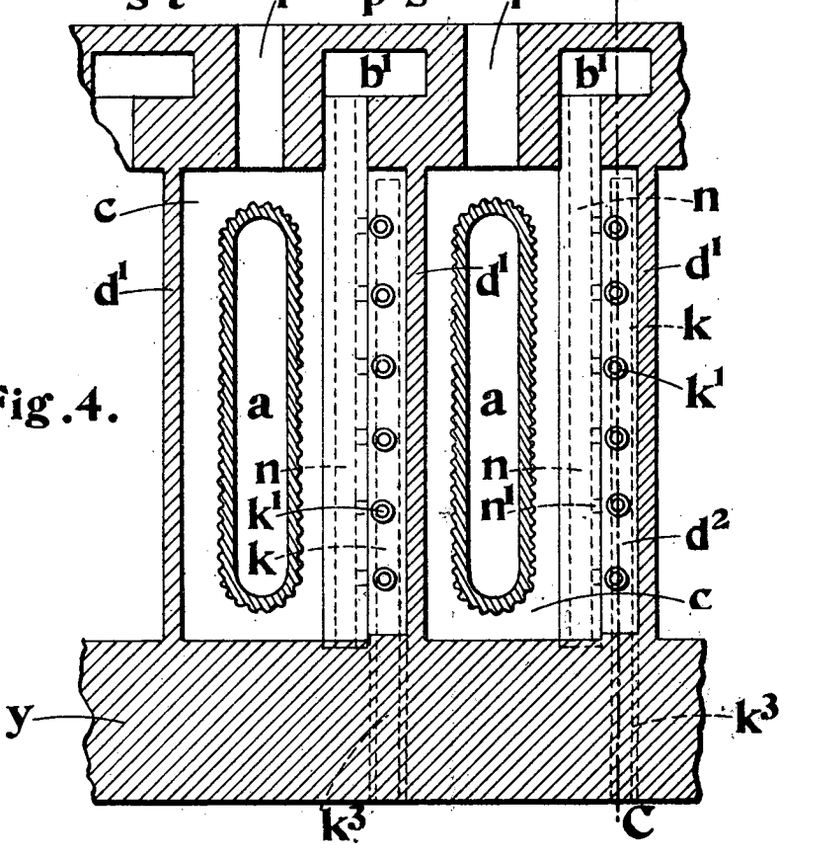
Fig.4.


b¹
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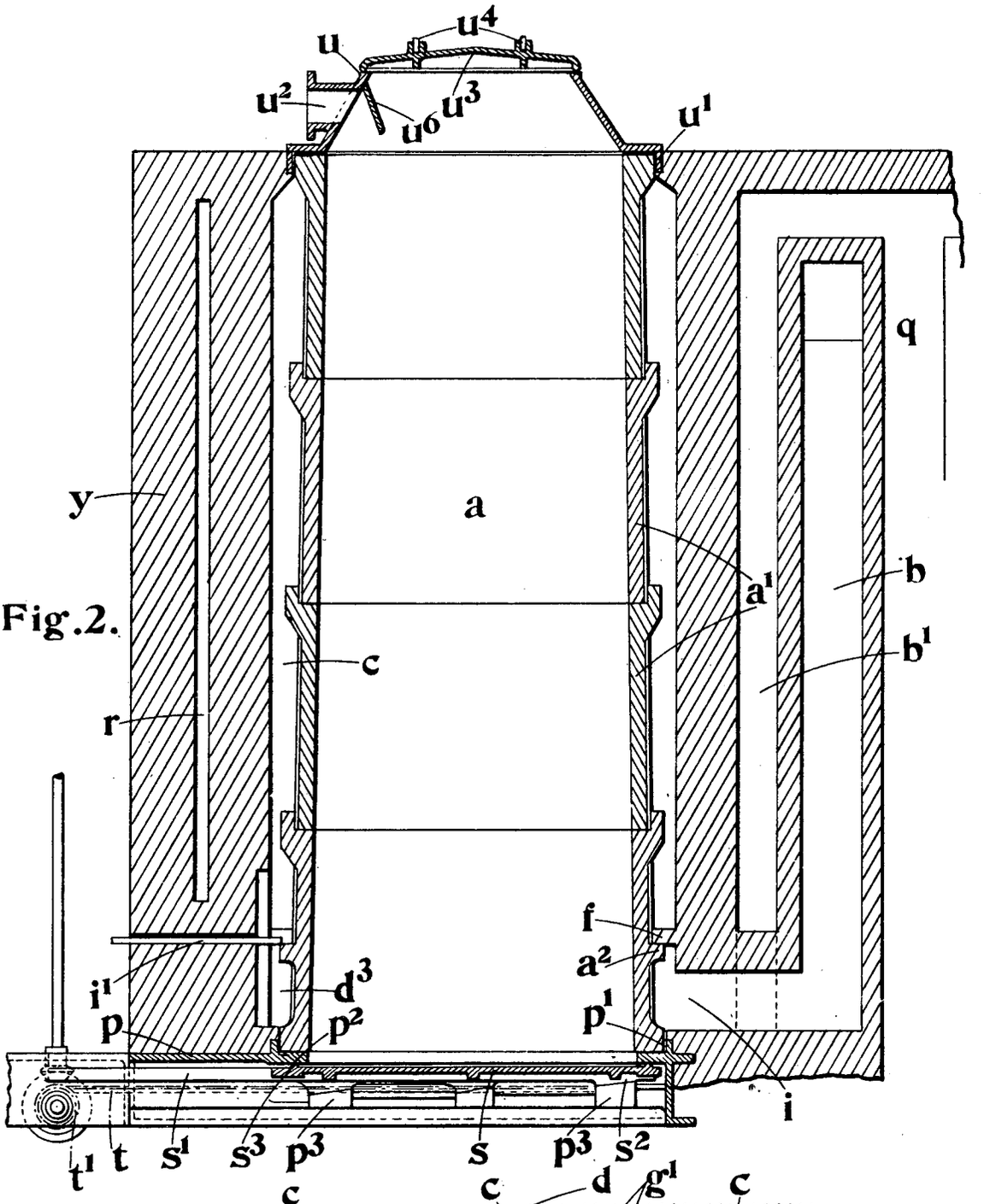
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Fig.2.

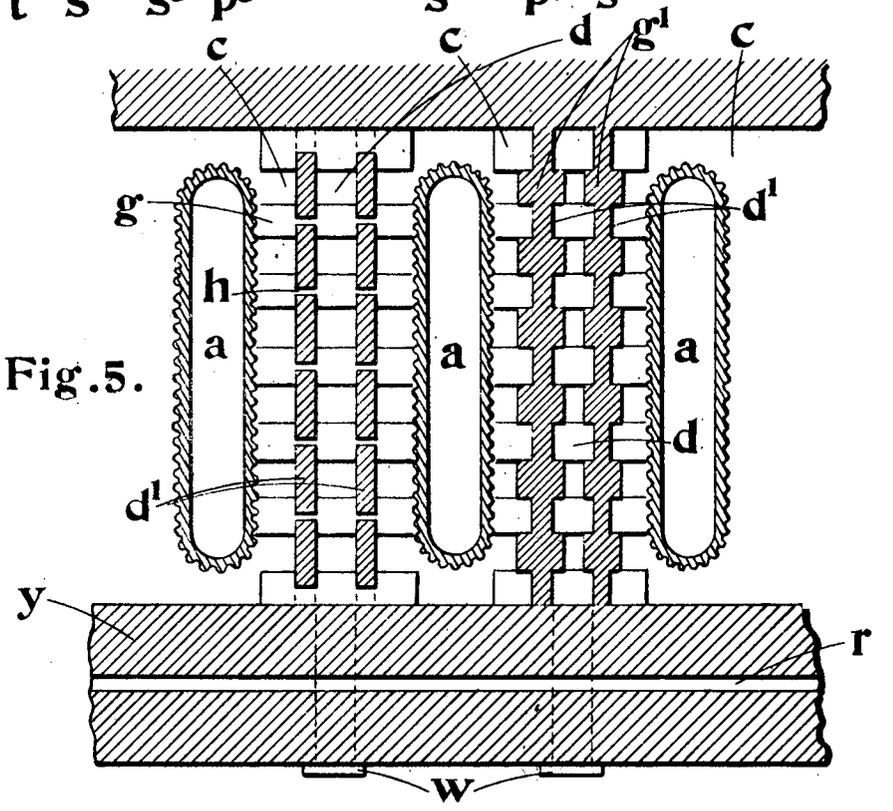
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Fig.5.

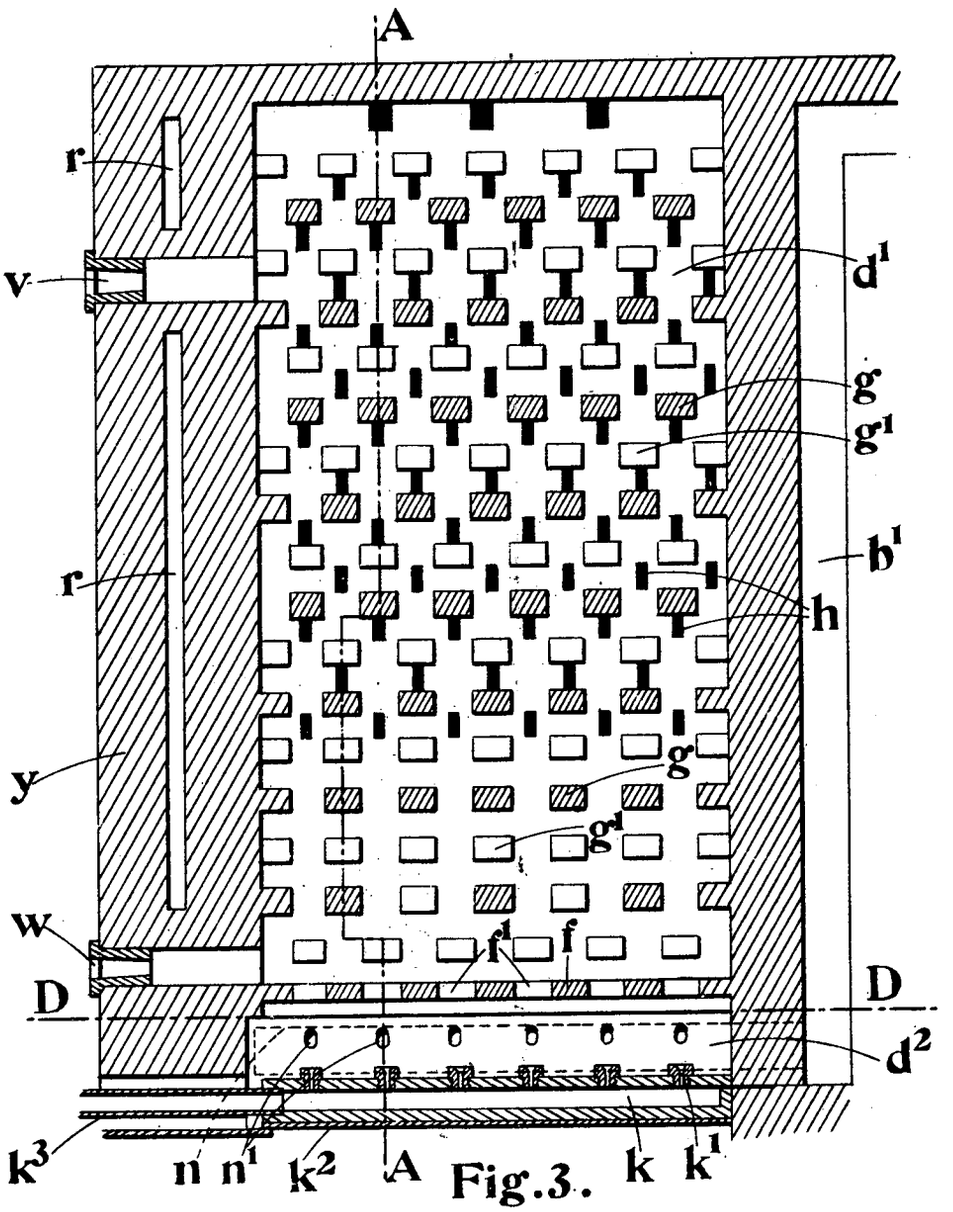
A
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Fig.3.

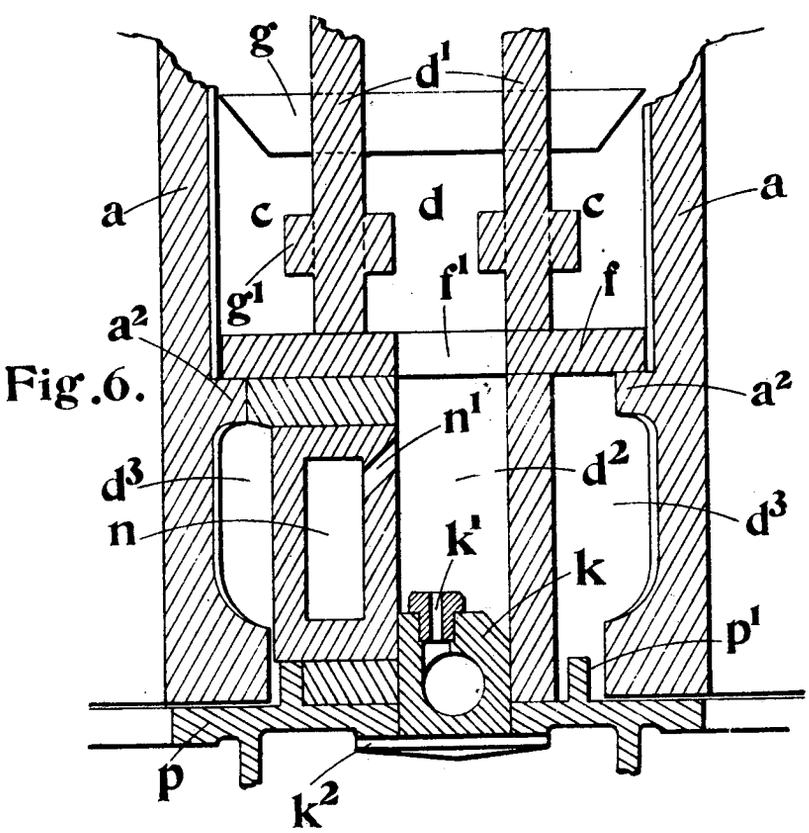
g
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Fig.6.

Money & Coins 5 Yrs.
119
12-7-12

2 Dft

G.R.S. 29A]

19

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The Superintendent of
Stamps

Dated

Despatched 10/7/12

Received

General No. 5143

No. 5m 319-11-2

Enclosure No. ~~1st~~ one with Re 1

Has the honor to forward herewith a Power-of-attorney executed by Messrs Herman Clarke and James Alexander Campbell, both of England, constituting Messrs Edward Evans & Co., London, as Agents in respect of their invention for "Improvements relating to apparatus for the destructive distillation of coal" and to request that the power may be impressed with the Mysore Stamp of the value of Re one (herewith forwarded) and returned

55.87
517

5/8/17

to this office.

By order,

5-7-12

for the Secretary

VS.41

G.R.S. 29A]

19

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

The Deputy Commissioner
Treasury Deptt

Dated Bangalore Dt

Despatched 10/7/12

Received

General No. G144

No. G 819-4-3

Enclosure No. with Rs 10/-

Has the honor to forward herewith a sum of Rs 10/- being the application fee received from messrs Edward Evans & Co London, for leave to file a specification of an invention for "Improvements relating to apparatus for the destructive distillation of coal by messrs Hermann Clarke and James Alexander Campbell, both of England, and to request the favor of an acknowledgment for the receipt of the amount.

By Order,

10
5.7.12

for the Secretary

GPB—20,000—24-10-10

S. 41

Copy of Docket no 16, dated 11th July 1912, from the Superintendent of Stamps in Mysore to the Secretary to Govt, Genl + Rev: Depts

---

His Dockets nos. Cs 143 & 145 dated 10th
Gen 319-11 Gen 320-11

July 1912.

Has the honor to return herewith duly stamped the Powers of Attorney received with the above, and to request the favor of an acknowledgment

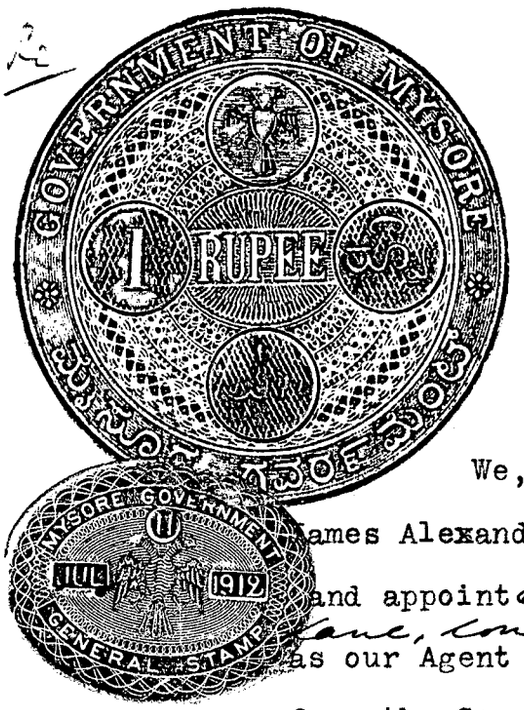
(sd) N. Krishnasamy Rao
Supdt of Stamps

DIARY No. 271/A.

1912-1913
SECTION Gen: Mis
FILE No. 319 of 1911-12
ITEM No. 4

fr. 315-11

POWER OF ATTORNEY.



IN THE MATTER of The Inventions and Designs Regulation, XI of 1894, of the Government of Mysore:

a n d

IN THE MATTER of Herman Clarke, of 3, London Wall Buildings, London, E.C. England, Engineer, and James Alexander Campbell, of 23, Eton Road, Ilford, England, Engineer, Inventors.

We, the above named Herman Clarke, and James Alexander Campbell, do hereby retain constitute and appoint Edward Evans & Co of 27 Chancery Lane, London, W.C. England. as our Agent and Attorney to apply for and obtain from the Government of Mysore an Exclusive Privilege for "Improvements relating to apparatus for the destructive distillation of coal" and to maintain the same in force; and we authorise them to sign our name to such papers and writings and do such acts regarding the same, including substitution and revocation, as may be necessary or expedient. And lastly, We request that all notices, requisitions and communications now or hereafter relating to the same may be sent to such Agent at the above address and that they be recognised as our authorised Agents in all proceedings incident thereto.

Dated this 1st day of June 1912.

Signed sealed and delivered by the above named Herman Clarke and James Alexander Campbell at London England in the presence of

Herman Clarke
James Alexander Campbell

George Ham, 27. Chancery Lane, London. W.C.
H. W. Blake

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

22 A
9/7

To
The Superintendent of
Stamps.

Dated

Despatched 23. 7. 12.

Received

General No. G. 402.
No. G. M. 319-11-5.

Enclosure No.

Has the honr to acknowledge the receipt of the duly stamped power - of - attorney forwarded with his No. 16 dy the 11th July 1912

By order

18.7.12
For Secy

Read by
[illegible]
20-7-12

GPB—20,000—24-10-10.

DIARY No. 285
G.

Rs 10-0-0 Book No. 1015 No 54

Treasury dated 12-7-1912

Received from The Offg: Secretary to the Govt. of India Home, Revl & Rev: Depts, the sum of

Rupees ten only

Annas ____ and Pies a being on account of application fee with reference to His No: 8164/S.M.314-11 Dated 10.7.12

In charge of Treasury.

2012-2013
...TION fee : mis
...E No. 3-1906/1911-12

2 No: 17

Noted and returned to Sec V

15-7-12

G.R.S. 29A]

19

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To
The Officer in charge,
Agricultural Chemist's Office
Bangalore

Dated

Despatched 5-8-12

Received

General No. G.683

No. G.M-319-11-7.

Enclosure No. 1.

~~Has the honor to~~ In forwarding herewith for report under Sec 6(2) of the Mysore Inventions and Designs Regulation No ~~XI~~ of 1894, an application for leave to file a specification of an invention for "Improvements relating to apparatus for the destructive distillation of Coal" by Messrs Herman Clarke and James Alexander Campbell of England.

has the honor to invite his attention forwarded with letter of even no. to the Govt. File No. 334 of 1906-07, Standing patent right in respect of a similar invention by Mr. Thomas Parker and request to be informed if the present invention is sufficiently novel for a patent being granted thereto.

By order,

27.7.12

for the Secretary

15.41

GPB—20,000—24-10-10.

I 14/8

No. 380

DEPARTMENT OF AGRICULTURE, MYSORE,

Bangalore.....12th August.....1912

13

DIARY No. 877

1912-1913

SECTION for : Mis

FILE No. 319 of 1911-12

CIR. No. 8

FROM

H. V. KRISHNAYYA, ESQ., B.A., F.C.S.,
ACTING OFFICER IN CHARGE OF THE
AGRICULTURAL DEPARTMENT, BANGALORE.

To

The Secretary to the Government of
His Highness the Maharaja of Mysore,
General & Revenue Departments,
B A N G A L O R E.

SIR,

In reply to your letter No.G.683/G.M.No.319-11-7 forwarding for report under section 6 (2) of the Mysore Invention and Designs Regulation No.XI of 1894 an application from Messrs.Clarke and Campbell of England, I beg to state that the fact of the grant of patent rights to Mr.Parker need not by itself interfere with the chances of this application as Mr.Parker's application refers to the process and this application to the plant for the manufacture of the fuel. The oven has some points in common with ~~the~~ other by-product coking ovens; but it seems to be very carefully designed with a view to conserve heat as much as possible. The idea of providing cavities filled with heat insulating material in the outer brickwork surrounding the retorts to minimise radiation is probably new. In the absence of complete drawings relating to Mr. Parker's invention, it is of course impossible to say wherein this oven differs from that used by Mr.Parker; but from a very brief reference in the patent literature available in this office, it was of a different type. The fact also that Messrs.Clarke and Campbell have recently acquired a patent for their plant in France where Mr.Parker also has patented his inventions, lends weight to the belief that his apparatus has some new features I therefore think

think that the leave prayed for by Messrs.Clarke and Campbell to file a specification of an Invention for improvements relating to apparatus for the destructive distillation of coal may be granted.

The application referred to above is herewith returned.

I have the honour to be,

Sir,

Your most obedient servant.

A Blanchard

Ag. Officer in charge,

Agrl. Department.

Rep. No. 12 of 1911-12

APPLICATION

TO THE DEWAN OF MYSORE.

The Application of Herman Clarke, of 3, London Wall Buildings, London, E.C. England, Engineer, and James Alexander Campbell, of 23 Eton Road, Ilford, England, Engineer, for leave to file a Specification under Part I of the Mysore Inventions and Designs Regulation 1894.

1. The Applicants are in possession of an Invention for "Improvements relating to apparatus for the destructive distillation of coal"; they are the Inventors thereof; and, to the best of their information and belief, the Invention is now within the meaning of Part I of the Inventions and Designs Act, 1888, an no circumstance exists which, if the Applicants are authorised to file a Specification and file it in accordance with that Part, will disentitle them to an Exclusive Privilege thereunder in respect of the Invention.

The Applicants have applied for a Patent in the United Kingdom in respect of this Invention, No. 13125 dated the 31st day of May 1911 See Illustrated Official Journal (Patents) No. 1168 page 802 Complete Specification filed the 27th day of October 1911 See Journal No. 1190 page 1536. ~~and accepted on the day of 19 .~~

~~See Journal No. page~~

2. The following is a description of the invention:-

This invention relates to apparatus for the destructive distillation of coal or other carbonaceous substances and more especially to an apparatus in which a number of retorts are mounted in a furnace setting having heating chambers provided between the respective retorts, such chambers being formed by two perforated walls distanced apart and provided with projecting baffle bricks to form extensive heating surfaces, some of the baffle bricks serving to tie the walls together, and wherein the heating of the retorts is effected by the combustion of gas or vapour and air in combustion chambers disposed beneath the heating chambers from which the gases pass upwardly and laterally through perforated walls into contact with the retorts, finally escaping to a central flue whence they pass out through a chimney.

The invention has for its objects to provide a construction whereby economy in the consumption of gas for heating the retorts is secured and wasteful outward radiation of heat from the retorts is reduced or prevented and generally to provide retorts and retort settings in which carbonisation may be effected at a relatively low temperature and in which the cost of construction is relatively small.

According to the invention the gas is supplied to burners arranged in the combustion chambers and the air introduced into the said chambers is pre-heated, being passed under control through air passages around the waste gas discharge outlets or passages to air chambers from which it issues into the combustion chambers and is uniformly distributed with the gas therein.

According to the invention also, in the outer brickwork surrounding the retorts and the heating chambers there are provided cavities or spaces filled with non-conducting material so that the radiation of heat outwards from the retorts is minimised or prevented in a great degree.

The invention comprises the construction hereinafter described and illustrated in the accompanying drawings in which

Figure 1 is a cross-sectional elevation of the retorts and retort setting taken on the line A.A. of Figure 3.

Figure 2 is a cross-sectional elevation of the retorts and retort setting taken at right angles to Figure 1 on the line B.B. of that Figure.

Figure 3 is a sectional elevation of the retort setting, showing one of walls of a heating chamber, and the corresponding combustion chamber taken on the

line C.C. of Figures 1 and 4.

Figure 4 is a sectional plan of the retorts and retort setting taken on the line D.D. of Figures 1 and 3.

Figure 5 is a sectional plan taken on the line E.E. of Figure 1.

Figure 6 is a sectional elevation to an enlarged scale of one of the combustion chambers with burner and air chamber.

The drawings show a setting in which two longitudinal series of retorts are intended to be set, one series only is shown in Figures 2, 3, 4 and 5, the other series is arranged on the opposite side of the air flue g which is intended to be common to both series of retorts in the construction illustrated.

In carrying the invention into effect a number of vertical retorts a are provided advantageously of oblong cross section and of good fire clay, and having wide lateral walls yielding narrow spaces widening slightly towards the lower extremity. A number of such retorts is provided in one setting and each retort may be formed in two or more lengths or sections a^1 connected together by a spigot and socket joint or otherwise. The exterior surface of the retorts is preferably corrugated to assist in strengthen-

ing them and to increase the effective heating surface. Each single retort a is mounted within a vertical chamber or setting c of a shape corresponding to its section having an intervening space between the retort and the walls d^1 of the adjacent heating chambers d, down which the heating gases may pass on their way to the outlet flue i. The retorts are preferably arranged in two longitudinal series with central waste gas outlet or discharge chamber such as b in the setting around which may be formed the passages b^1 for pre-heating the air for the combustion of the heating gases.

The walls d^1 of each of the heating chambers are tied together at intervals by baffle bricks g which project through across the walls and into the retort chambers c and contact with the sides of the retorts, thereby serving to support their walls. Other projecting baffle bricks g^1 are also provided to increase the heating surface of the walls of the heating chambers.

At the lower end of each of the heating chambers there is provided a combustion chamber or space d^2 in which there is fitted from below a removable gas burner k provided with a supply pipe k^3 and having removable nozzles k^1 and

adapted to be retained in position in any suitable manner, as by a supporting plate k^2 bolted in position on the frame members of the setting p. At one side of the combustion chamber d^2, immediately below the corresponding wall d^1 of the heating chamber, there is provided an air chamber n having outlets n^1 leading to the combustion chamber and preferably corresponding in number to the gas nozzles k^1. The air is received into the chamber n from the heated air passage b^1 or passages extending upwardly along the length of the retorts over the centrally disposed waste gas outlet or discharge chamber b and downwardly to a central air supply chamber or passage g common to both series of retorts (as illustrated in Figure 2) whence it is admitted to the said heated air passage or passages through suitable dampers or regulating valves not indicated in the drawings.

After the gas or vapour and air are injected and ignited in the combustion chamber d^2 the gases escape into the section of the heating chamber d disposed immediately above through suitable apertures f^1 in a slab f extending over the combustion chamber d^2 and above the air chamber n and resting upon a flange a^2 provided on the lowest section of the retort a, thus forming a chamber d^3 around the

lower end of the retort. The gases then pass upwardly and laterally into the retort chambers e through apertures h in the walls of the heating chamber, which apertures preferably increase in cross sectional area towards the upper end of the heating chamber.

The heating gases, after passing through the walls of the heating chambers d, pass downwards in contact with the lateral walls of the retorts into the chambers d^3 and thence to outlet passages or flues i corresponding in number to the several combustion chambers or retorts, the flow of the gases being preferably controlled by dampers i^1 in order to regulate the heating, and thence into the central waste gas outlet or discharge chamber b leading to the chimney. These latter may also be provided with dampers for controlling the draught and flow of the gases.

In the outer brickwork setting y surrounding the retorts and heating chambers, there are formed spaces or cavities r or the brickwork is provided as double walls with intervening spaces to receive non-conducting material serving to minimise or to reduce the outward radiation of heat from the retorts and heating chambers and

thus materially to contribute to the economical working of the apparatus.

Observation holes such as v and w Figure 3, may be provided closed by removable blocks.

The retorts and the adjacent parts of the brickwork setting in which are arranged the combustion chambers and heating chambers are supported on suitable frames p preferably of cast iron.

The lower ends of the retorts are received into suitable seatings p_1 and provided to receive them in the said frames and are closed by suitable cover plates s, mounted in slideways s_1, which in the closed position fit against seatings p_2 provided for them in the frame.

The cover plates are operated by any suitable means, for example, by means of a toothed rack t detachably secured to the cover plate s_1 and adapted to engage a spur wheel or pinion t_1 operated through gearing, if necessary, by a hand wheel, the rotation of which will thus cause movement of the cover plate s in one direction or the other.

In order to secure an effective closure and at the same time to avoid frictional

contact with the seatings in the opening and closing movements, the cover plates are provided with stepped inclined surfaces or abutments s^2 adapted to contact with inclined surfaces or abutments p^3 formed on the frames so that in the lateral movement of the cover plates they are raised and pressed upwardly into contact with their seatings.

The cover plate may advantageously be provided with ridges s^3 which bed against the seatings referred to.

At the upper ends the retorts are provided with hoods u having socket flanges u^1 at their lower ends adapted to fit over the outwardly extending flanges provided at the upper end of the top retort section.

The outwardly extending flanges of each retort section may serve for the closure or separation of the spaces immediately surrounding the retorts.

Each hood is provided with a gas outlet u^2 for connection to the hydraulic main and a cover plate u^3 advantageously pivoted upon a lever or levers u^4 conveniently fulcrummed to the hood, which lever, when the cover plate is

in the closed position, is locked by a cam device 5.

A baffle plate 6 is provided in the hood opposite the gas outlet in such position that it serves, during retort charging operations, to prevent the entry of any of the charge into the gas outlet.

In the case where fire clay retorts are used it is desirable to make joints between the retort sections, and between the retort sections and the hood and supporting frame with asbestos or similar refractory material.

In order to secure equalised heating of the retorts throughout their length where this is considerable, the heating chambers may be divided into sections and each section be provided with a separate combustion chamber having gas and air supply and a separate outlet into the central discharge chamber or chambers.

Any suitable arrangements may be made for charging and discharging the retorts by the provision of travelling hoppers, discharge shoots and conveyors.

Having now particularly described and ascertained the nature of our said Invention and in what manner the same is to be performed, we declare that what we claim is:-

1. Apparatus for the destructive distillation of coal or other carbonaceous substances, wherein a number of vertical retorts are arranged in series with corresponding heating chambers intermediate of the retorts, each heating chamber communicating with a corresponding combustion chamber beneath, in which a gas burner is transversely disposed and into which combustion chamber air is passed from a transversely disposed air chamber to which preheated air is supplied, the arrangement being such that the preheated air and gas are uniformly distributed into the combustion chamber and the heating gases pass from the combustion chamber upwardly through the heating chamber, and then downwardly between the walls of the heating chamber and the retort to the outlet flues, substantially as described.

2. Apparatus for the destructive distillation of coal or other carbonaceous substances, such as specified in claim 1, in which the vertical retorts are each provided of oblong cross-section, and in separate lengths or sections, gradually widening out towards the bottom substantially as

described.

3. Apparatus for the destructive distillation of coal or other carbonaceous substances, such as specified in claim 1, and in which cavities or spaces are provided in the brickwork setting for the reception of non-conducting material, substantially as described.

4. Apparatus for the destructive distillation of coal or other carbonaceous substances substantially as hereinbefore described with reference to the accompanying drawings.

3. The applicants, therefore apply for leave to file a Specification of the invention pursuant to Part 1 of the Mysore Inventions and Designs Regulation 1894.

Dated this 1st day of June 1912.

H. Herman Clarke.

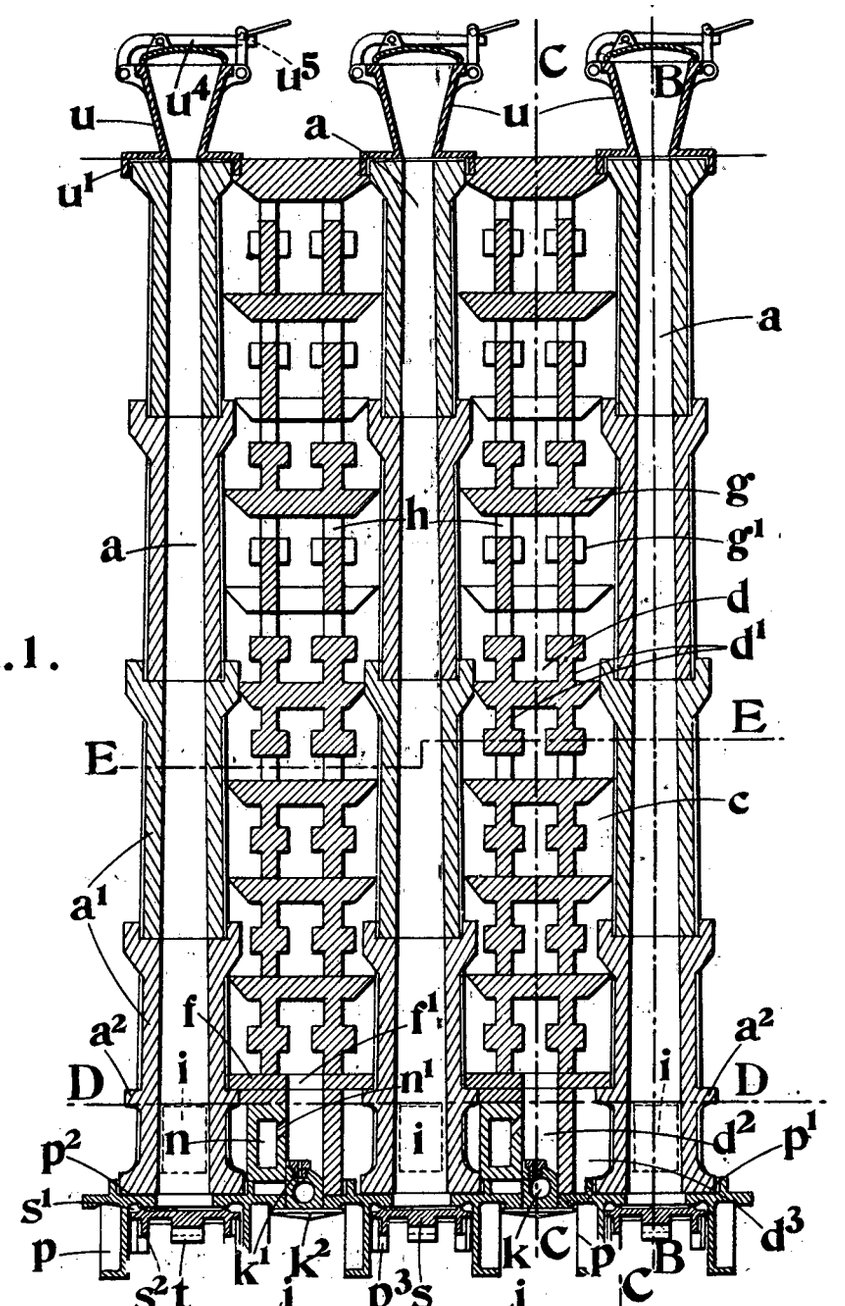
James Alexander Campbell

We, Herman Clarke, and James Alexander Campbell, the applicants above named do declare that what is stated in this Application is true to our knowledge, except as to matters stated on information and belief, and as to those matters we believe them to be true.

H. Herman Clarke

James Alexander Campbell

Fig.1.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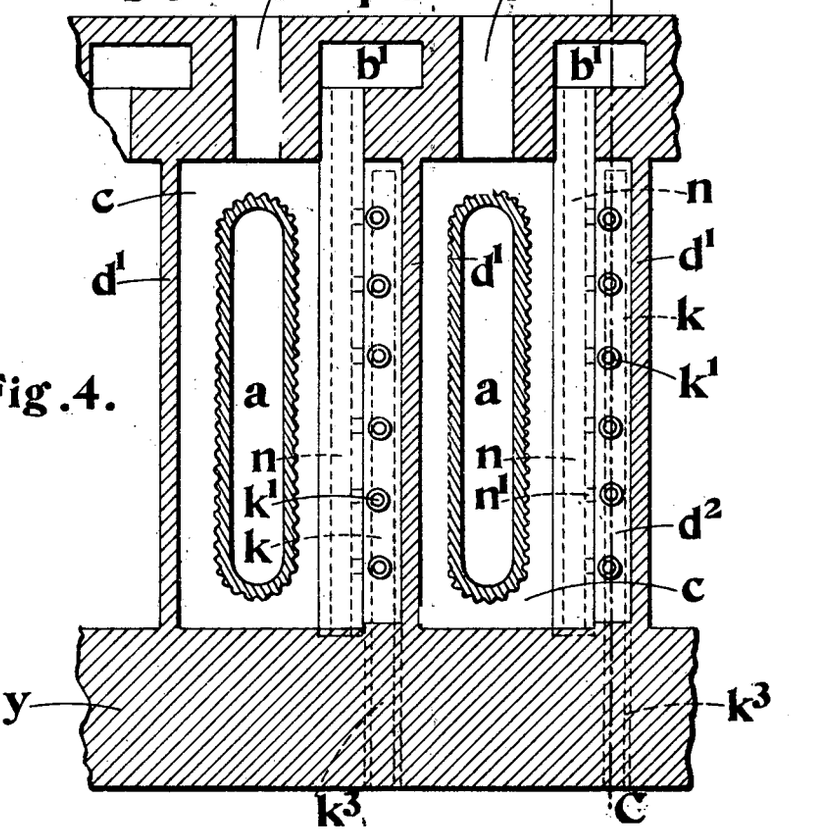
C

Fig.4.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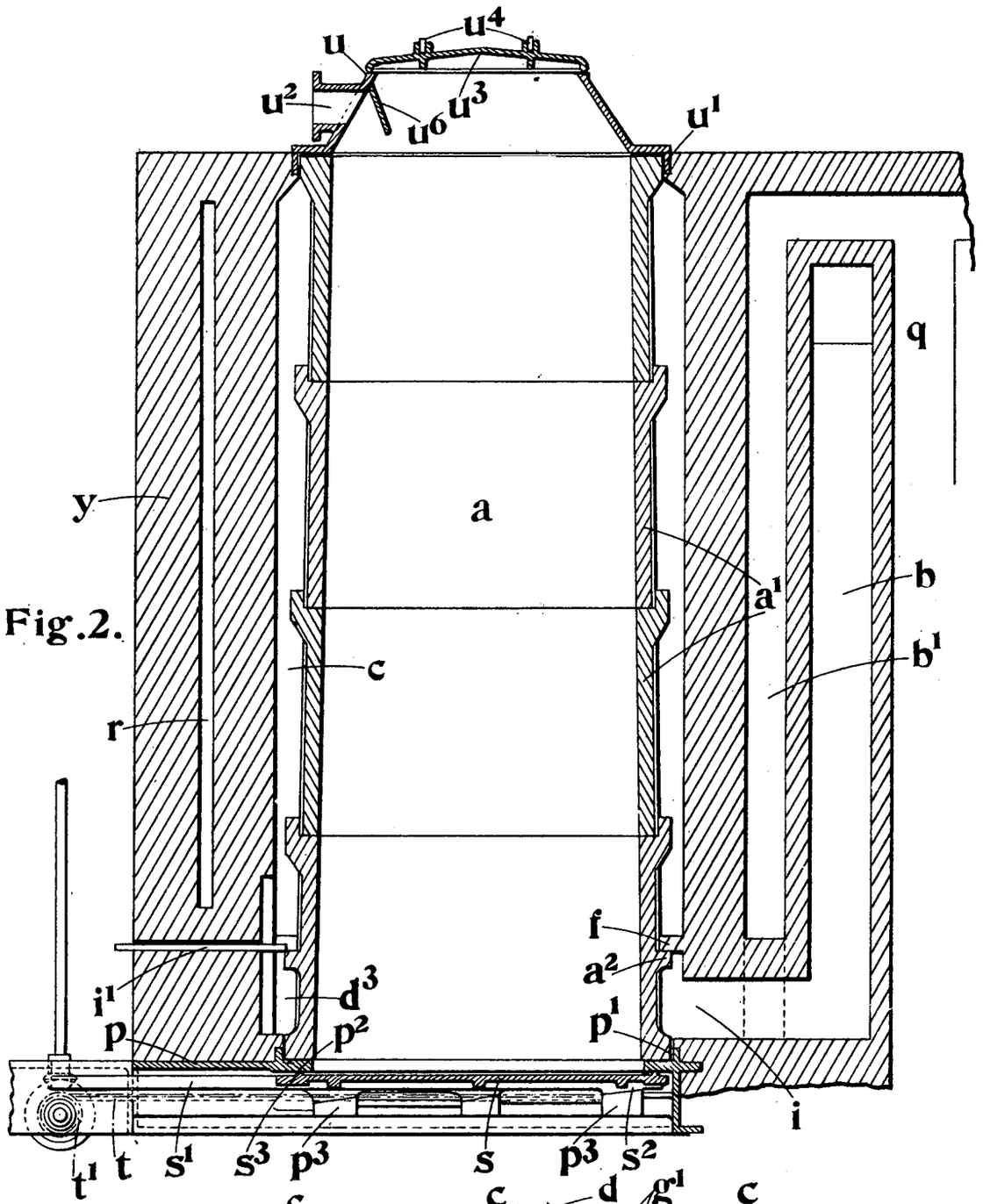
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Fig.2.

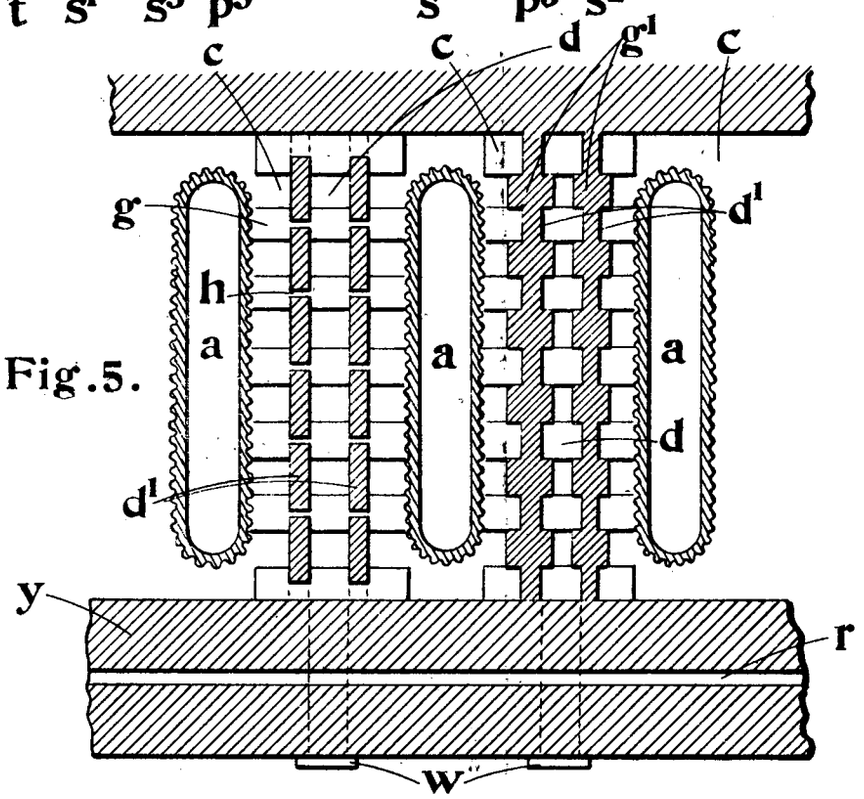
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Fig.5.

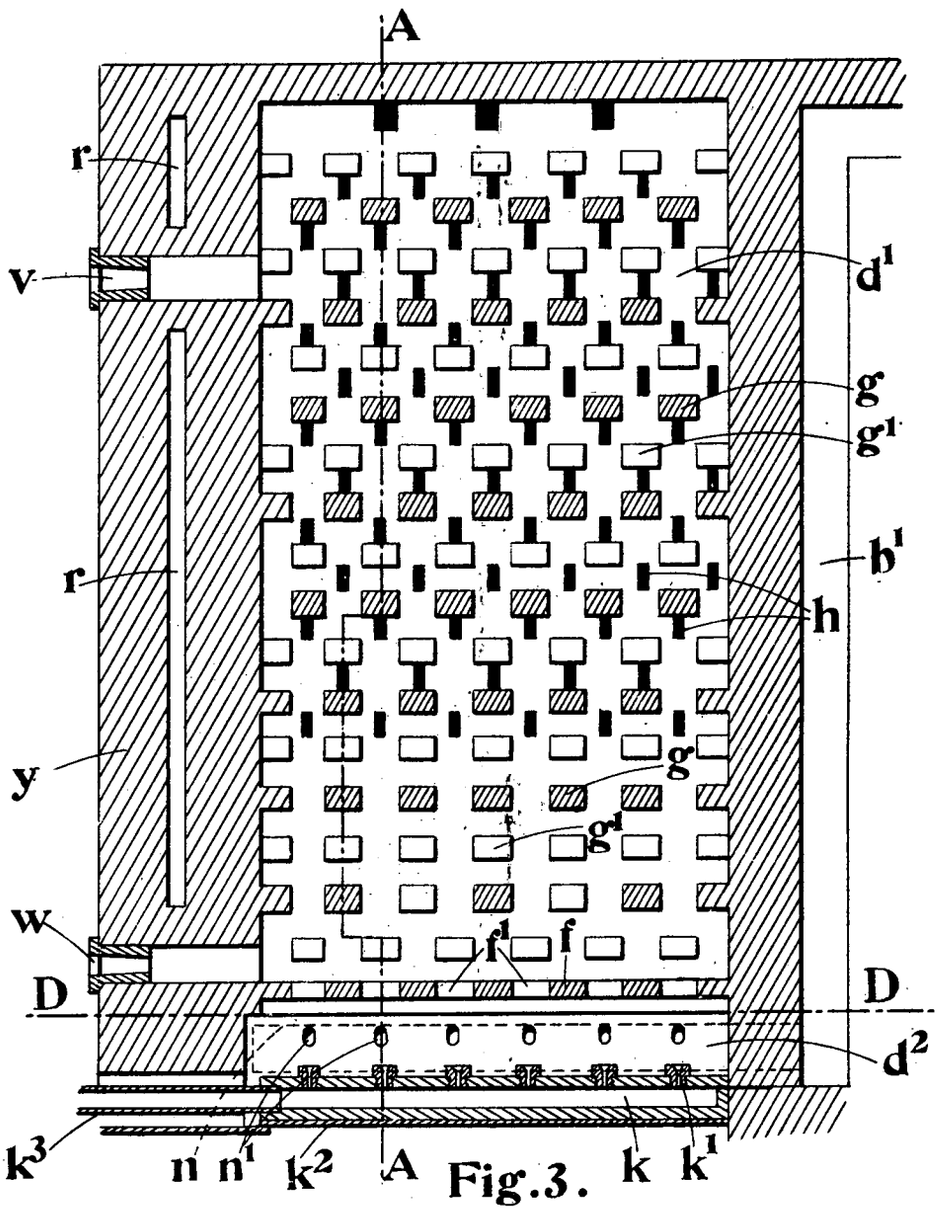
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Fig.3.

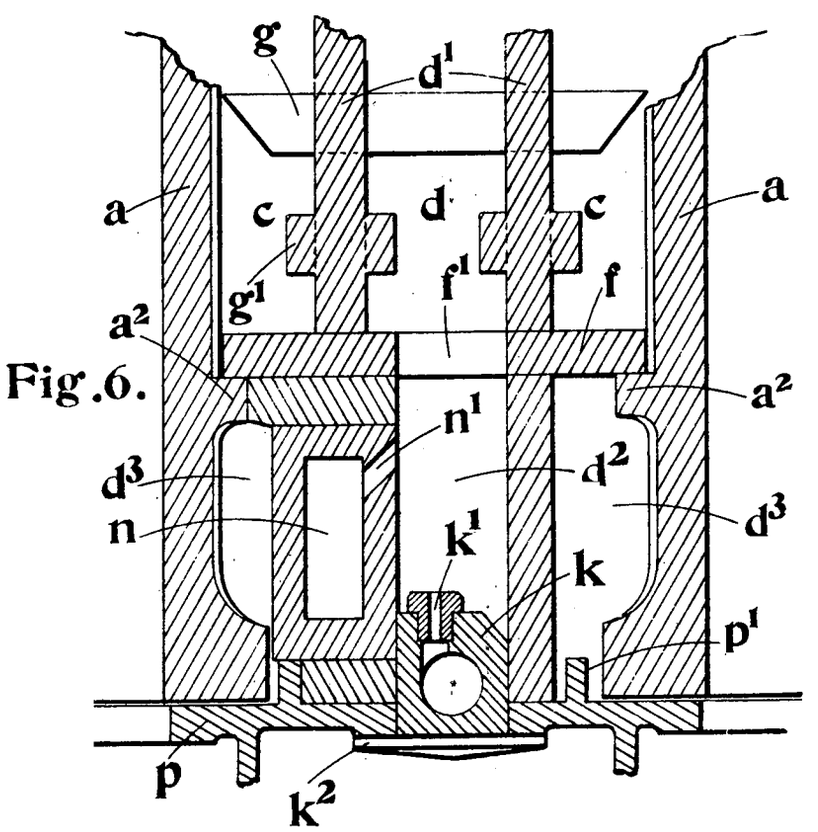
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Fig.6.

2. 051

G. 1209/G.M. 319—10—9

GOVERNMENT OF MYSORE

General Department.

Register No. 12 **of 190**1/12.

Bangalore, the 29th August 1912.

WHEREAS an application, dated the 1st June 1912 and received on the 24th June 1912, has been submitted under Section 5 of the Mysore Inventions and Designs Regulation, 1894, by Mr. Herman Clarke of 3, London Wall Buildings, London, E.C, England, Engineer and Mr. James Alexander Campbell, of 23 Eton Road, Ilford, England, Engineer (hereinafter referred to as "the applicant") for leave to file a specification of an invention for "Improvements relating to apparatus for the destructive distillation of coal"

And whereas the applicant has duly complied with all the requirements of Section 5 of the said Regulation;

The Government of Mysore are pleased, under Section 6 of the said Regulation, to authorize the applicant to file a specification of the said invention in accordance with the provisions of the said Regulation.

ORDERED, that the applicant be, and he is hereby, informed accordingly.

By Order of the Government of Mysore,

Dft)

9.7.12 VS. 41

for the Secretary to the Govt. of Mysore,
Gen. and Rev. Depts.

Certified that the fees prescribed in the fourth schedule to the Mysore Inventions and Designs Regulation, 1894, in respect of the application for leave to file the said specification and of the filing thereof have been paid by the applicant, and that the specification hereinbefore described has been duly filed in accordance with the provisions of Section 8 of the said Regulation on this the twenty first day of November 1912.

Dft)

25.11.12

for the Secretary to the Govt. of Mysore,
Gen. and Rev. Depts.

VS

(*Section* 8 *of the Inventions and Designs Regulation*, 1894.)

8. (1) If within six months from the date of an order under Section 6, Sub-Section (1), or within such further time, not exceeding three months, as the Government of Mysore, in its discretion, may, on cause shown to its satisfaction and on payment of the fee prescribed in that behalf in the fourth schedule, see fit to allow, the applicant causes a specification of his invention to be filed in manner by this Part required, and the fee prescribed in the fourth schedule in respect of the filing of the specification to be paid, the applicant shall, subject to the other provisions of this Part, be entitled to the exclusive privilege of making, selling and using the invention in the Territories of Mysore, and of authorizing others so to do, for a term of fourteen years from the date of the filing of the specification.

(2) But an exclusive privilege in respect of an invention of a new manufacture shall, notwithstanding anything in Sub-Section (1), cease, if the inventor fails to pay, within the time limited in that behalf by the fourth schedule, any fee prescribed in that schedule in respect of the continuance of the privilege.

(3) If, nevertheless, in any case, by accident, mistake, or inadvertence, an inventor fails to pay any such fee within the time so limited, he may apply to the Government of Mysore for an enlargement of the time for making the payment.

(4) Thereupon the Government of Mysore may enlarge the time accordingly, on payment of the fee prescribed in that behalf in the fourth schedule, and subject to the following conditions, namely:—

(*a*) the time for making a payment shall not in any case be enlarged for more than three months; and

(*b*) if any suit is instituted in respect of an infringement of the exclusive privilege committed after a failure to make a payment within the time limited for the making thereof and before the enlargement of that time, the Court disposing of the suit may, if it thinks fit, refuse to award or give any damages in respect of the infringement.

GPB—150—30-7-06

G.R.S. 26]

File No. 319-11

Serial No. 10

Diary No. of letter replied to 5557

No. G. 1210

General and Revenue Secretariat

( )

, the 19

To

Messrs Edward Evans & Co.,

27, Chancery Lane,

London, W.C.

Date of issue 29-8-12

Signed by Mr. B. Ramaswamy

Gentlemen,

With reference to your letter no. 32/2 dated the 7th June 1912, I am directed to forward herewith Govt Order No. G/1209 dated the 29th August 1912, 8m319-11-9 authorising Messrs Herman Clarke and James Alexander Campbell of England, to file a specification of their invention for "Improvements

over.

H T (RC)

SUBJECT.

relating to apparatus for the destructive distillation of coals" and to request that the same may be communicated to the parties concerned.

I have &c.

23/8/12

VS
22/8/12
for the Secretary

VS
23.8.12

VS. 41

List of enclosures,

Copied by

Examined by

GPB—20,000—23-9-10

two
Read the British
Postal orders for 20 Sent
WJ
4.11.12

EDWARD EVANS & CO.

Telephone, No. 4916 Holborn.
Telegraphic and Cable Address. "Effugium, London."
Lieber's Code used.

27, Chancery Lane,
London, W.C

BL/D

GA
14.11.12
V + Cochin
14/11 pm

No. G.1210.
G.M. 219-11-10.

Oct. 15th 1912.

DIARY No. 2469

1912-1913
SECTION for : Mus
FILE No. 3190 of 1911-12
SERIAL No. 11

The Secretary to the Government of His
Highness the Maharaja of Mysore,
Genl. and Rev. Departments,
Bangalore, Mysore.

Sir,

re Government Order No. G. 1209/G.M. 319-11-9
dated the 29th August 1912.
Clarke and Campbell.

We beg to return order authorizing Messrs. Clarke and Campbell to file a specification together with six copies of the specification and respectfully request that the Exclusive Privilege may be sent to us in due course.

We also forward herewith the official fee of 30 Rupees.

Very respectfully,

SPECIFICATION.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, Herman Clarke, of 3, London Wall Buildings, London, E.C. England, Engineer, and James Alexander Campbell, of 23 Eton Road, Ilford, England, Engineer, are in possession of an invention registered as No. G.1209/G.M. 319-11-9 of 1912. for "Improvements relating to apparatus for the destructive distillation of coal", and we, the said Herman Clarke and James Alexander Campbell, do hereby declare the nature of our said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement thereof that is to say:-

This invention relates to apparatus for the destructive distillation of coal or other carbonaceous substances and more especially to an apparatus in which a number of retorts are mounted in a furnace setting having heating chambers provided between the respective retorts, such chambers being formed by two perforated walls distanced apart and provided with projecting baffle bricks to form extensive heating surfaces, some of the baffle bricks serving to tie the walls together, and wherein the heating of the retorts is effected by the combustion of gas or vapour and air in com-

bustion chambers disposed beneath the heating chambers from which the gases pass upwardly and laterally through perforated walls into contact with the retorts, finally escaping to a central flue whence they pass out through a chimney.

The invention has for its objects to provide a construction whereby economy in the consumption of gas for heating the retorts is secured and wasteful outward radiation of heat from the retorts is reduced or prevented and generally to provide retorts and retort settings in which carbonisation may be effected at a relatively low temperature and in which the cost of construction is relatively small.

According to the invention the gas is supplied to burners arranged in the combustion chambers and the air introduced into the said chambers is pre-heated, being passed under control through air passages around the waste gas discharge outlets or passages to air chambers from which it issues into the combustion chambers and is uniformly distributed with the gas therein.

According to the invention also, in the outer brickwork surrounding the retorts and the heating chambers there are provided cavities or spaces filled with non-conducting material so that

the radiation of heat outwards from the retorts is minimised or prevented in a great degree.

The invention comprises the construction hereinafter described and illustrated in the accompanying drawings in which

Figure 1 is a cross-sectional elevation of the retorts and retort setting taken on the line A.A. of Figure 3.

Figure 2 is a cross-sectional elevation of the retorts and retort setting taken at right angles to Figure 1 on the line B.B. of that Figure.

Figure 3 is a sectional elevation of the retort setting, showing one of the walls of a heating chamber, and the corresponding combustion chamber taken on the line C.C. of Figures 1 and 4.

Figure 4 is a sectional plan of the retorts and retort setting taken on the line D.D. of Figures 1 and 3.

Figure 5 is a sectional plan taken on the line E.E. of Figure 1.

Figure 6 is a sectional elevation to an enlarged scale of one of the combustion chambers with burner and air chamber.

The drawings show a setting in which two longitudinal series of retorts are intended

to be set, one series only is shown in Figures 2,3,4 and 5, the other series is arranged on the opposite side of the air flue q which is intended to be common to both series of retorts in the construction illustrated.

In carrying the invention into effect a number of vertical retorts a are provided advantageously of oblong cross section and of good fire clay, and having wide lateral walls yielding narrow spaces widening slightly towards the lower extremity. A number of such retorts is provided in one setting and each retort may be formed in two or more lengths or sections a^1 connected together by a spigot and socket joint or otherwise. The exterior surface of the retorts is preferably corrugated to assist in strengthening them and to increase the effective heating surface. Each single retort a is mounted within a vertical chamber or setting c of a shape corresponding to its section having an intervening space between the retort and the walls d^1 of the adjacent heating chambers d, down which the heating gases may pass on their way to the outlet flue i. The retorts are preferably arranged in two longitudinal series with central waste gas outlet or discharge chamber such as b in the setting around which may be formed the

passages b^1 for pre-heating the air for the combustion of the heating gases.

The walls d^1 of each of the heating chambers are tied together at intervals by baffle bricks g_ which project through across the walls and into the retort chambers e and contact with the sides of the retorts, thereby serving to support their walls. Other projecting baffle bricks g^1 are also provided to increase the heating surface of the walls of the heating chambers.

At the lower end of each of the heating chambers there is provided a combustion chamber or space d^2 in which there is fitted from below a removable gas burner k provided with a supply pipe k^3 and having removable nozzles k^1 and adapted to be retained in position in any suitable manner, as by a supporting plate k^2 bolted in position on the frame members of the setting p. At one side of the combustion chamber d^2, immediately below the corresponding wall d^1 of the heating chamber, there is provided an air chamber n having outlets n^1 leading to the combustion chamber and preferably corresponding in number to the gas nozzles k^1. The air is received into the chamber n from the heated air passage b^1 or passages,

extending upwardly along the length of the retorts over the centrally disposed waste gas outlet or discharge chamber b and downwardly to a central air supply chamber or passage q common to both series of retorts (as illustrated in Figure 2) whence it is admitted to the said heated air passage or passages through suitable dampers or regulating valves not indicated in the drawings.

After the gas or vapour and air are injected and ignited in the combustion chamber d^2 the gases escape into the section of the heating chamber d disposed immediately above through suitable apertures f^1 in a slab f extending over the combustion chamber d and above the air chamber n and resting upon a flange a provided on the lowest section of the retort a, thus forming a chamber d^3 around the lower end of the retort. The gases then pass upwardly and laterally into the retort chambers e through apertures h in the walls of the heating chamber, which apertures preferably increase in cross sectional area towards the upper end of the heating chamber.

The heating gases, after passing through the walls of the heating chambers d, pass downwards in contact with the lateral walls of the retorts into the chambers d^3 and thence to outlet

passages or flues i corresponding in number to the several combustion chambers or retorts, the flow of the gases being preferably controlled by dampers i^1 in order to regulate the heating, and thence into the central waste gas outlet or discharge chamber b leading to the chimney. These latter may also be provided with dampers for controlling the draught and flow of the gases.

In the outer brickwork setting f surrounding the retorts and heating chambers, there are formed spaces or cavities r or the brickwork is provided as double walls with intervening spaces to receive non-conducting material serving to minimise or to reduce the outward radiation of heat from the retorts and heating chambers and thus materially to contribute to the economical working of the apparatus.

Observation holes such as v and w Figure 3, may be provided closed by removable blocks.

The retorts and the adjacent parts of the brickwork setting in which are arranged the combustion chambers and heating chambers are supported on suitable frames p preferably of cast iron.

The lower ends of the retorts are received into suitable seatings p^1 and provided to receive them in the said frames and are closed by suitable cover plates s, mounted in slideways s^1, which in the closed position fit against seatings p^2 provided for them in the frame.

The cover plates are operated by any suitable means, for example, by means of a toothed rack t detachably secured to the cover plate s and adapted to engage a spur wheel or pinion t operated through gearing, if necessary, by a hand wheel, the rotation of which will thus cause movement of the cover plate s in one direction or the other.

In order to secure an effective closure and at the same time to avoid frictional contact with the seatings in the opening and closing movements, the cover plates are provided with stepped inclined surfaces or abutments s^2 adapted to contact with inclined surfaces or abutments p^3 formed on the frames so that in the lateral movement of the cover plates they are raised and pressed upwardly into contact with their seatings.

The cover plate may advantageously be provided with ridges s^3 which bed against the seatings referred to.

At the upper ends the retorts are provided with hoods u having socket flanges u^1 at their lower ends adapted to fit over the outwardly extending flanges provided at the upper end of the top retort section.

The outwardly extending flanges of each retort section may serve for the closure or separation of the spaces immediately surrounding the retorts.

Each hood is provided with a gas outlet u^2 for connection to the hydraulic main and a cover plate u^3 advantageously pivoted upon a lever or levers u^4 conveniently fulcrummed to the hood, which lever, when the cover plate is in the closed position, is locked by a cam device u^5.

A baffle plate u^6 is provided in the hood opposite the gas outlet in such position that it serves, during retort charging operations, to prevent the entry of any of the charge into the gas outlet.

In the case where fire clay retorts are used it is desirable to make joints between the retort section, and between the retort sections and the hood and supporting frame with asbestos or similar refractory material.

In order to secure equalised heating of the retorts throughout their length where this is considerable, the heating chambers may be divided into sections and each section be provided with a separate combustion chamber having gas and air supply and a separate outlet into the central discharge chamber or chambers.

Any suitable arrangements may be made for charging and discharging the retorts by the provision of travelling hoppers, discharge shoots and conveyors.

Having now particularly described and ascer - tained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:-

1. Apparatus for the destructive distillation of coal or other carbonaceous substances, wherein a number of vertical retorts are arranged in series with corresponding heating chambers intermediate of the retorts, each heating chamber communicating with a corresponding combustion chamber beneath, in which a gas burner is transversely disposed and into which combustion chamber air is passed from a transversely disposed air chamber to which pre- heated air is supplied, the arrangement being such that the preheated air and gas are uniformly

distributed into the combustion chamber and the heating gases pass from the combustion chamber upwardly through the heating chamber, and then downwardly between the walls of the heating chamber and the retort to the outlet flues, substantially as described.

2. Apparatus for the destructive distillation of coal or other carbonaceous substances, such as specified in claim 1, in which the vertical retorts are each provided of oblong cross-section, and in separate lengths or sections, gradually widening out towards the bottom substantially as described.

3. Apparatus for the destructive distillation of coal or other carbonaceous substances, such as specified in claim 1, and in which cavities or spaces are provided in the brickwork setting for the reception of non-conducting material, substantially as described.

4. Apparatus for the destructive distillation of coal or other carbonaceous substances substantially as hereinbefore described with reference to the accompanying drawings.

Dated this 17th day of October 1912.

Edward Evans & Co

Agents

25/11/12 4260

MYSORE GOVT. GEN. & REV. SECRETARIAT,

No. G. 2946 *Dated Bangalore,* 3rd December 1912

G.M. 319-11-12

NOTIFICATION.

(PATENT.)

The following specification of an invention has been filed in accordance Sections 8, 9, 10 and 11 of Regulation XI of 1894 (The Inventions and Designs Regulations) and is open to inspection at the Mysore Government Secretariat on application to the Secretary to the Government of His Highness the Maharaja of Mysore, General and Revenue Departments, and on payment of a fee of one Rupee.

By Mr. Herman Clarke of 3, London Wall Buildings, London, E.C., England, Engineer, and Mr. James Alexander Campbell, of 23, Eton Road, Ilford, England, Engineer.

"Improvements relating to apparatus for the destructive distillation of Coal."

"

By Order,

25/11/12

for the Secretary.

To

The Compiler *Mysore Gazette,* for publication.

GPB—500—23-7-06.

copy 26/11/12

4765 25/11/12

No. C 2947
G. M. 319-12-13

MYSORE GOVT: GEN. & REV. SECRETARIAT,
Dated Bangalore, 3rd Dec 1912.

From

The Secretary to the Government of H. H. the Maharaja of Mysore,
General and Revenue Departments.

To-

Messrs Edward Evans & Co
27, Chancery Lane,
London, WC

Sir,

With reference to your letter dated the 16th Oct 1912 I am directed to forward copy of a Notification No. G 1843-319-11 dated November 1912 issued by this Government in regard to the invention filed by you under Regulation XI of 1894 (The Inventions and Designs Regulations.) and request that the same may be communicated to the parties concerned.

The order granting permission to file specification is herewith returned, with the certificate at foot, duly filled in and signed.

I have the honor to be,
Sir,
Your most obedient servant,

25.11.12
for off Secretary.

copied 25/11/12

G.R.S. 29A]

19

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To
The Deputy Commissioner
Treasury Department,
Bangalore.

Dated

Despatched 4th Dec 1912

Received

General No. G. 2952

No. G.M. 319-72-14

Enclosure No. Mis. Rs 30/-

Has the honor to forward herewith a sum of Rs 30/- received from Messrs Edward Evans & Co, London, W.C., being the fee payable under Cl (2) Schedule IV of the Mysore Inventions and Designs Regn. no XI of 1894 on filing a specification of an invention for "Improvements relating to Apparatus for the destructive distillation of Coal" by Messrs Herman Clarke and James Alexander Campbell, and to request the favor of an acknowledgment for the receipt of the amount

By order,

25/11/12

Secretary

GPB—20,000—24-10-10.

G.R.S. 29A]

19

From

Secy. to the Govt. of His Highness
The Maharaja of Mysore,
Genl. and Rev. Dept.

To

(1) The ~~State~~ Geologist
(2) " Chief Engineer,
(3) " Supdt ~~Govt~~ Govt Museum.
(4) Dated " Offr in charge, Agricultural Dept

Despatched 4.12.12.

Received

General No. G.2953-6

G.M. No. 319-11-15

Enclosure No. one

Has the hona to forward herewith for record in his office a copy of the specification of an invention for "Improvements relating to Apparatus for the ~~destructive~~ distillation of coal" by Messrs Herman Clarke and James Alexander Campbell of England, and to request the favor of an acknowledgment.

By Order,

25.11.12

for the Secretary

VS

GPB—20,000—24-10-10

DIARY No. 2959

Book No. 1041

Rs 30-0-0 Bangalore Treasury dated 16-12-12 No 78 120

Received from Secretary to the Govt of Mysore Genl & Rev Depts

Rupees Thirty only

Annas — and Pies — being on account of

application fee in regard of an invention as per his docket No. S 2452 dated 4th December S. R. 319-11-14

In charge of Treasury.
Bangalore

Noted and returned to Br E

7-12-12

GA

M.G.D. 13]

MYSORE GEOLOGICAL DEPARTMENT,

DATED BANGALORE,.....6.....December..191 2.

No. 1303

DIARY No. 2981

10/12/1913

SECTION Gen : Mis

FILE No. 319 of 1911

SERIAL No. 17

From

DR. W. F. SMEETH, M.A., D.SC., A.R.S.M., etc.,
State Geologist in Mysore.

To

K.R. Srinivasaiengar, Esquire, M.A.,
Offg. Secretary to the Government of His Highness
the Maharaja of Mysore, General & Revenue Depts.

Sir,

I have the honour to acknowledge the receipt of a copy of the specification of an invention for "Improvements relating to Apparatus for the destructive distillation of coal" by Messrs. Herman Clarke and James Alexander Campbell of England, forwarded with your Docket No.G. 2953-6/G.M.319-11-15, dated 4th December 1912.

I have the honour to be,
Sir,
Your most obedient servant,

For State Geologist in Mysore.

C.N.

G.P.B.—400—21-6-10

No. 163.

OFFICE OF ECONOMIC BOTANIST,
SUPERINTENDENT, MYSORE GOVERNMENT MUSEUM,

Bangalore, dated....5/7th December.....1912.

S...3003

12-12-13
per: mail
319 of 1911-12
18

FROM

G. H. KRUMBIEGEL, ESQ., F.R.H.S.,
Economic Botanist,
Superintendent, Mysore Govt. Museum,
Bangalore.

To The Secretary, to the Govt of H.H. the Maharaja of Mysore Gen and Rev. Depts

Sir.

I have the honor to acknowledge the receipt of a Copy of the Specification of an invention for "Improvement relating to apparatus for the destructive distillation of Coal" by messrs H. Clarke and G. A. Campbell, forwarded with your letter No. G. 2953-6/G.H. 319-11-15, dated the 4 instant,

I have the honor to be,
Sir,
Your most Obedient Servant.

G. H. Krumbiegel

Superintendent

V 9/12 pr GP

1912. 12

From

G. H. KRUMBIEGEL, Esq., F.R.H.S.,
Economic Botanist,
Supt., Mysore Govt. Museum,
Bangalore.

To The Secretary, to the Govt of H.H. the Maharaja of Mysore. Gen and Rev. Depts.

Dated 5th December 1912

Despatched 7th —— .. ——

Received

General No. 163.
No.

Enclosure No.

Acknowledging the receipt of a copy of the Specification of an invention for "Improvements relating to apparatus for the — destructive distillation of Coal" by messrs:- H. Clarke and A. A. Campbell

GPE—5,76,000—6-4-12

GA

Camp No. 116

DEPARTMENT OF AGRICULTURE, MYSORE,

Camp Hiriyur, 7th December 1912.
~~Bangalore~~

DIARY No. 3007

1912-13
GENERAL DEPTT.
Order No. 319 of 1911-12
No. 19

FROM

H. V. KRISHNAYYA, ESQ., B.A., F.C.S.,
ACTING OFFICER IN CHARGE OF THE
AGRICULTURAL DEPARTMENT, BANGALORE.

To

The Secretary to the Government of
H. H. the Maharajah of Mysore,
General and Revenue Deptts.
Bangalore.

SIR,

I have the honour to acnowledge receipt of a copy of the specification of an invention for improvements relating to apparatus for the destructive distillation of coal forwarded with your letter No. G 2983 - 6/ G.M. 319-1115 dated the 4th December 1912.

I have the honour to be,
Sir,
Your most obedient servant,

H V Krishnayya

Officer in Charge.

GPB—1,000—11-7-12

Mysore P. W. Department,

Central Office,

No./0440 Bangalore, 24th December 1912.

From

Karpur Shrinivasrav, Esq.,B.Sc., L.C.E.,

Offg.Chief Engineer of Mysore,

Bangalore.

3279

12-13

Gen : Mis

319 of 1911-12

20

To

K.R.Srinivasiengar, Esq., M.A.,

Offg.Secretary to the Government of

His Highness the Maharaja of Mysore,

General and Revenue Departments.

Sir,

I have the honour to acknowledge the receipt of a copy of the specification of an invention for "Improvements relating to apparatus for the destructive distillation of coal" by Messrs Herman Clarke & James Alexander Campbell of England, forwarded with your No.G.2953-6/ G.M.319-11-15 dated the 4th December 1912.

I have the honour to be,

Sir,

Your most obedient servant,

K. Srinivasaiengar

For Chief Engineer of Mysore.

B.V.